



Memorandum

To: Sean Sheldrake, U.S. Environmental Protection Agency (EPA) Region 10

From: Scott Coffey and Gary Hazen, CDM Federal Programs Corporation

Date: January 12, 2018

Subject: *Evaluation of Cost Impacts to Alternative F Modified from Proposed Changes to Remedial Action Level for TPAH, Portland Harbor Superfund Site*

Introduction

CDM Federal Programs Corporation (CDM Smith) has been tasked to provide an evaluation of the cost impacts from changes proposed by EPA to Alternative F Modified from the January 2017 Portland Harbor Superfund Site Record of Decision (ROD) (EPA 2017b). These changes were proposed based on January 2017 updates to the human health toxicity values for benzo(a)pyrene (BaP) in EPA's Integrated Risk Information System (IRIS) (EPA 2017a). The proposed modification includes changing the total polycyclic aromatic hydrocarbon (TPAH) remedial action level (RAL) for nearshore sediments (RAL F) from 13,000 µg/kg to 30,000 µg/kg. This effort is hereafter referred to as the "TPAH RAL modification cost evaluation".

Purpose and Intended Uses

The intended use of the TPAH RAL modification cost evaluation is to provide a ROD-level cost estimate revision of Alternative F Modified using the modification to the RAL proposed by EPA. The results of these proposed changes in terms of cost to the revised Alternative F Modified costs are compared to the original Alternative F Modified costs presented as part of the ROD. This TPAH RAL modification cost evaluation is intended to provide EPA with an evaluation of the cost impacts from the modification of the RAL.

Methodology and Cost Guidance

The TPAH RAL modification cost evaluation was developed based on the same methodology and guidance as described in Appendix IV, Appendix G - Update (*Methodology and Organization of Selected Remedy Cost Estimate*) of the ROD. As detailed in that appendix, these costs are expected to have an accuracy between -30% to +50% of actual cost, based on the scope presented in the ROD. They are prepared solely to facilitate relative comparisons between alternatives for remedy selection purposes, not for establishing project budgets or negotiating Superfund enforcement settlements.

The TPAH RAL modification cost evaluation focuses on proposed changes to the TPAH RALs for only the nearshore areas. The nearshore areas include shallow, intermediate, and future maintenance dredge (FMD) areas. The RALs for the navigation channel were not modified; therefore, quantities and costs for navigation channel areas remain unchanged from the ROD.



New quantities were developed for the modification of Alternative F Modified based on the proposed changes to the TPAH RALs previously described within this memorandum. These quantities were independently derived for this evaluation and were not previously presented in the ROD.

Key Assumptions for the Cost Evaluation

Key assumptions for the TPAH RAL modification cost evaluation include:

1. This evaluation assesses proposed changes to the TPAH RAL for nearshore sediments (RAL F).
2. Quantities for certain non-cost drivers (such as, but not limited to, institutional controls, mobilization/demobilization, and erosion/residual control measures) were not updated due to time constraints and minimal impacts on overall cost of the revised alternatives evaluated in this comparison. Some overall cost drivers for Alternative F Modified such as, but not limited to, treatment and disposal of PTW were not affected by the proposed changes to RALs.
3. The estimated construction duration for the proposed modification to Alternative F Modified was kept consistent with the construction duration for Alternative F Modified in the ROD cost estimate. All other costs estimate assumptions unrelated to the quantity modifications were kept consistent with what was presented in the ROD cost estimate. Costs for the proposed modification to Alternative F Modified are based on 2016 cost sources with no escalation included, which is consistent with the ROD cost estimate

Conclusions

As shown in Table 1, the modifications to quantities based on the proposed TPAH RAL modification would decrease the present value cost from Alternative F Modified as presented in the ROD by approximately \$35 million (3.3 percent decrease) when modifications are applied to nearshore areas across the entire site.

Organization

The TPAH RAL modification cost evaluation is organized into the following components:

- a. Overview – Evaluation of Costs Impacts from Proposed Changes to Remedial Action Levels for TPAH to Alternative F Modified, Portland Harbor Superfund Site

This is the memorandum you are currently reading that summarizes the approach to developing the TPAH RAL modification cost evaluation.

- b. Cost Comparison of Alternative F Modified from the ROD to Revised Alternative F Modified (TPAH RAL Adjustment) – Portland Harbor Superfund Site (Table 1)

References

EPA. 2017a. IRIS Toxicological Review of Benzo(a)pyrene. EPA/635/R-17/003Fa. January.

EPA. 2017b. Record of Decision, Portland Harbor Superfund Site. January 3.

Table 1 - Cost Comparison of Alternative F Modified from the ROD to Revised Alternative F Modified (TPAH RAL Adjustment)

SELECTED REMEDY COST SUMMARY

Site: Portland Harbor Superfund Site
Location: Portland, Oregon
Phase: Preliminary Remedial Design (-30% to +50%)
Base Year: 2016

<u>Alternative</u>	<u>Total Capital Cost</u>	<u>Total Periodic Cost</u>	<u>Total Non-Discounted Cost</u>	<u>Present Value Cost</u>
F Modified ¹	\$1,184,607,000	\$524,028,000	\$1,708,635,000	\$1,054,200,000
Revised F Modified (TPAH RAL Adjustment) ²	\$1,146,255,000	\$504,592,000	\$1,650,847,000	\$1,019,110,000
Cost Difference³	-\$38,352,000	-\$19,436,000	-\$57,788,000	-\$35,090,000
Percent Difference⁴	-3.2%	-3.7%	-3.4%	-3.3%

Notes:

This summary table is a preliminary working draft; not all minor cost line items have been updated. Thus, the information on this table should be used for preliminary discussion purposes ONLY.

Nearshore represents the combination of shallow, intermediate, and future maintenance dredge (FMD) areas for purposes of this evaluation.

Quantities for certain non-cost drivers (such as, but not limited to, institutional controls, mobilization/demobilization, and erosion/residual control measures) were not updated due to time constraints and minimal impacts on overall cost of the revised alternative evaluated in this comparison. Some overall cost drivers for Alternative F Modified such as, but not limited to, treatment and disposal of PTW were not affected by the presumed changes to the RAL.

¹ - Costs for Alternative F Modified represent the costs presented for Alternative F Modified in the Portland Harbor Superfund Site ROD (EPA 2017).

² - Costs for Revised F Modified (TPAH RAL Adjustment) represent Alternative F Modified with an adjustment made to the remedial action level (RAL) for total polycyclic aromatic hydrocarbons (TPAH) for nearshore areas.

³ - Represents the cost difference between Revised Alternative F Modified and the Alternative F Modified from the ROD.

⁴ - Represents the percent difference between Revised Alternative F Modified and the Alternative F Modified from the ROD.